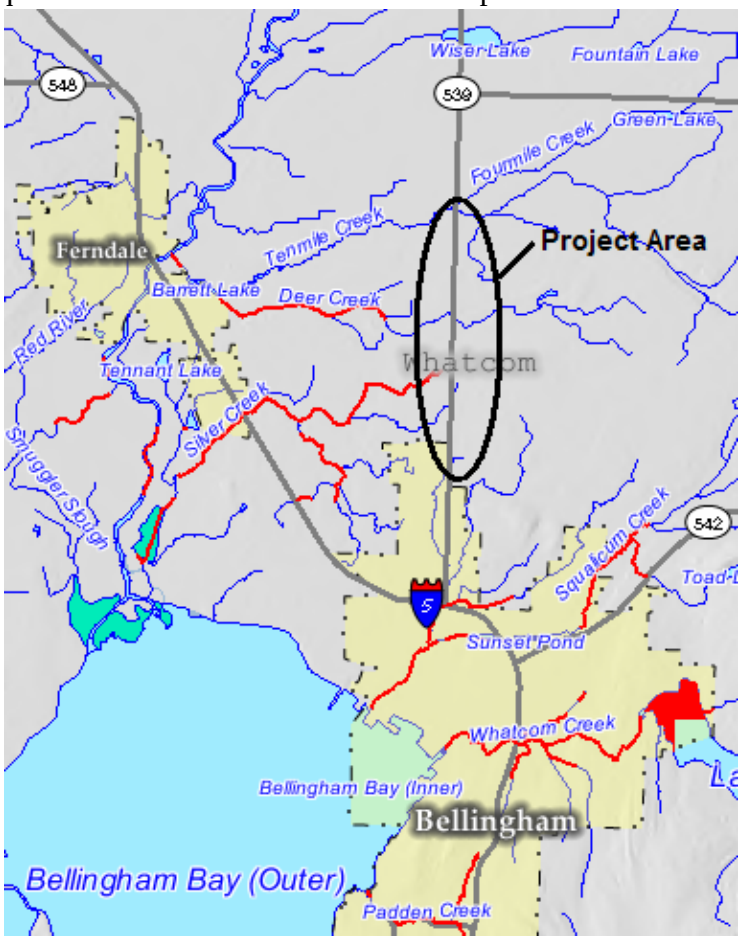
FACT SHEET FOR NPDES PERMIT WA-003211-5
Construction of Improvements to State Route 539 (SR 539)
From Horton Road (Milepost 1.64) to Tenmile Road (Milepost 6.26)

This fact sheet is a companion document to National Pollutant Discharge Elimination System (NPDES) Permit No. WA-003211-5. This permit is issued to Washington State Department of Transportation (WSDOT) to allow the discharge of storm water and other clean non-process water associated with construction activity from Highway 539 (aka Guide Meridian) road widening construction project to the receiving waters listed below directly and via small ditches and wetlands. This fact sheet establishes the basis for requirements which are included in the permit.

The permit conditions are based on the Construction Stormwater General NPDES Permit and Fact Sheet (the General Permit from here on) issued on November 16, 2005, by the Department of Ecology. This permit adds effluent limits and requirements for ambient stream monitoring to general permit conditions. Ecology conditioned the 2005 General Permit to comply with federal stormwater rules, TMDL considerations, and provide "all known, available, reasonable treatment" of construction site stormwater runoff. Treatment requirements also are consistent with the guidance in the Department of Transportation's Highway Runoff Manual (HRM), WSDOT's approved equivalent to Ecology's Stormwater Management Manual for Western Washington. This permit adds more stringent requirements than those in the General Permit.



The permit requires the Permittee to develop and implement a Stormwater Pollution Prevention Plan (SWPPP) to manage the site to minimize erosion, treat storm water to remove suspended soil, and take appropriate precautions to prevent other contaminants from mixing with the storm water on the site. The Permittee is required to sample stormwater runoff for turbidity (clarity) levels – levels in excess of a benchmark of 25 NTU trigger requirements to improve SWPPP items until discharges return to levels below 25 NTU. The permit sets effluent limits for pH equal to the water quality standards and discharge turbidity of 50 NTU. The Permittee is required to monitor Fourmile, Tenmile, and Deer Creek for compliance with the water quality turbidity standard. This permit combines requirements of the general permit that are appropriate for the size of the project with water quality monitoring to prevent pollution of State Waters. Definitions are included in the permit.

GENERAL INFORMATION

Applicant:	Washington State Department of Transportation Northwest Region 15700 Dayton Avenue North, Mail Stop 138 Seattle, Washington 98133-9710
Project Title:	State Route 539 (SR 539) from Horton Road (milepost 1.64) to Tenmile Road (milepost 6.26)
Site Name and Address:	SR 539 (Guide Meridian) milepost 1.64 to milepost 6.26 Partly in Bellingham, partly in Whatcom County
Type of Facility:	Construction Activity
Receiving Waters:	Stream 0553 (tributary to Squalicum Creek) Stream 0143 (tributary to Silver Creek) Deer Creek Tenmile Creek Fourmile Creek Drainage ditches and wetlands along the project corridor drain to the creeks listed above.
Waterbody ID Number:	122560348877 Deer Creek 1225759488563 Tenmile Creek 1224863488674 Fourmile Creek

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INTRODUCTION

The Federal Clean Water Act (FCWA, 1972, and later modifications, 1977, 1981, and 1987) established water quality goals for the navigable (surface) waters of the United States. One of the mechanisms for achieving the goals of the Clean Water Act is the National Pollutant Discharge Elimination System (NPDES) system of permits, which is administered by the Environmental Protection Agency (EPA). EPA has delegated responsibility to administer the NPDES Permit Program to the State of Washington on the basis of Chapter 90.48 RCW, which defines the Department of Ecology's authority and obligations in administering the Wastewater Discharge Permit Program.

In 1990, the Phase I stormwater regulations addressed construction activities that disturbed five or more acres of land as Category (x) of the definition of "stormwater discharges associated with industrial activity" (40 CFR 122.26(b)(14)(x)). Regulations adopted by the State include procedures for issuing permits (Chapter 173-220 WAC), water quality criteria for surface and ground waters (Chapters 173-201A and 200 WAC), and sediment management standards (Chapter 173-204 WAC). These regulations require that the State issue a permit to limit pollutants in discharges of wastewater to waters of the state. The regulations also establish the basis for effluent limitations and other requirements which are to be included in the permit. One of the requirements (WAC 173-220-060) for issuing a permit under the NPDES Permit Program is the preparation of a draft permit and an accompanying fact sheet. Public notice of the availability of the draft permit is required at least 30 days before the permit is issued (WAC 173-220-050). The fact sheet and draft permit are available for review. Details on the public notice procedures are contained in Appendix A of the fact sheet. Definitions for both the permit and fact sheet are attached to the permit.

The Department of Ecology typically issues a General Construction Stormwater NPDES Permit (the General Permit) for construction projects. Ecology decided to issue an individual NPDES permit for this project due to its size, duration, and proximity to critical habitat for Chinook salmon. In comparison to the General Permit, this permit sets more specific monitoring and reporting conditions, requires cessation of earth exposing activities if the discharge exceeds 25 NTU turbidity level, and requires monitoring before the date of October 2006 set in the general permit. This fact sheet uses the text and concepts from the General Permit with additional explanation as needed.

The draft permit and fact sheet were reviewed by the Permittee. Errors and omissions identified in this review were corrected before going to public notice. After the public comment period has closed, the Department will summarize the substantive comments and the response to each comment. Comments, responses, and the resultant changes to the permit and fact sheet will be summarized in Appendix C. Parties that submit comments will receive a copy of the final permit and fact sheet.

BACKGROUND

DESCRIPTION OF THE PROJECT

The project involves increasing the traffic capacity of State Route 539 (SR 539) from Horton Road (milepost 1.64) to Tenmile Road (milepost 6.26) located in Whatcom County, Washington, for a total project length of approximately 4.62 miles. Project documents project about 76 acres of ground disturbance in two project phases. This project will widen the existing two-lane roadway to include a five-lane highway with four 12-foot-wide through lanes, a 13-foot-wide two-way left turn lane, and 8-foot-wide shoulders. The project more-than-doubles the size of the highway. WSDOT estimates earth moving at 108,000 cubic yards (CY) of excavation and 32,000 CY of gravel borrow imported to use as fill. The project will replace two bridges and six culverts on six stream crossings. WSDOT will construct the project in two phases: four stormwater ponds and the wetland mitigation site are scheduled for construction in the summer of 2006 as the first phase; the remainder will be constructed over the following two-year period. The project provides permanent stormwater treatment facilities for the entire highway section.

The major impacts on aquatic resources will occur from demolition of infrastructure and utility relocation, excavation, reconfiguration of the stormwater drainage system, reconstruction of stream crossings, roadway widening, and intersection improvements. Aquatic resources will be permanently impacted through fill and excavation of 251,839 square feet (5.78 acres) in portions of 60 Category II, III, and IV wetlands throughout the project limits. Permanent impacts will occur on six stream locations affecting 825 linear feet and 10,452 square feet (0.24 acres) of stream channel. These impacts will result from placing fill below the OHWM due to culvert replacement, stream relocation, and bridge replacement. The construction project will provide water pollution controls for runoff from exposed cut slopes and embankments as well as other sources.

The concept of "threshold discharge area" is used in the permit and fact sheet. *Threshold Discharge Area (TDA)* is an on-site area draining to a single natural discharge location or multiple natural discharge locations that combine within ¼ mile downstream (as determined by the shortest flow path). The project is divided into TDAs for engineering computations used to comply with SWMMWW requirements. Monitoring requirements depend on the construction status of a TDA. The permit uses the term to divide the project up into logical drainage basins and treat each TDA as a discharge unit. A TDA is usually the area that contributes runoff to an outfall. TDAs are similar to drainage basins.

DESCRIPTION OF THE RECEIVING WATER

This project is located within the 826-square-mile Nooksack River basin. The Nooksack River basin is located in northwestern Washington State between the city of Bellingham and the Canadian border. Water flows from the northwestern slopes of the Cascade Mountain Range through foothills and lowlands to Bellingham Bay. This watershed is designated as Water Resource Inventory Area 1. This project is located in the lower part of the river basin. Most land in the lower basin is privately held, and is intensively used for agricultural purposes

upstream of the project. Land use in the discharge area ranges from commercial businesses and shopping in the south end to agriculture and homes in the northern part of the project. Storm water discharges to four tributaries to the lower Nooksack River: Fourmile, Tenmile, Deer, and Silver Creek systems. See Appendix B, which shows a map of the roadway with photos of the streams in the project area.

Table 1 presents a summary of the receiving water quality characteristics for the water bodies in the project area, including both class-based and use-based classifications according to Ecology's former and revised surface water quality standards (WAC 173-201A). EPA has not yet approved Ecology's revised use-based surface water quality standards completely. Table 2 includes water quality impairment reflected in the 2002/2004 303(d) list of impaired and threatened water bodies. All impairments listed occur downstream of the project area.

Table 1: Ecology Previous and Revised Water Quality Characteristics of Receiving Waters

Receiving Water Body	Use Designations (Ecology 2003)	Classification (Ecology 1997)
Deer Creek	Salmon and trout spawning, non-core rearing, and migration; primary contact recreation; and all other water supply and miscellaneous uses	Class A Freshwater
Tenmile Creek	Salmon and trout spawning, non-core rearing, and migration; primary contact recreation; and all other water supply and miscellaneous uses	Class A Freshwater
Silver Creek	Salmon and trout spawning, non-core rearing, and migration; primary contact recreation; and all other water supply and miscellaneous uses	Class A Freshwater
Fourmile Creek	Salmon and trout spawning, non-core rearing, and migration; primary contact recreation; and all other water supply and miscellaneous uses	Class A Freshwater

Table 2. Ecology's 1998 and Draft 2002/2004 303(d) List of Impaired Surface Waterbodies – (Ecology 2004)

Water Body	2002/2004 303(d) List (Category 5 Listings)	Comments
Tenmile Creek	Dissolved oxygen	3 miles downstream of project
Deer Creek	Low pH, ammonia	½ to 1 mile downstream of project
Silver Creek	Dissolved oxygen, fecal coliform bacteria	Various segments from ½ mile downstream of project all the way to the Nooksack River

Table 3. Outfalls & Stream Information for Project. Coordinates in Decimal Degrees (NAD 83/WGS 84 Datum). See Figures 1 and 2 for Outfall Maps.

Outfall #	Latitude (degrees)	Longitude (degrees)	Description	Basin[1]	Receiving Water Name	Q[2] (CFS)
012	48.80787	-122.48811	Detention pond outfall	Horton	Stream 0553	1.09
004	48.81140	-122.48748	Detention pond outfall	South Waldron	Stream 0553	0.81
001	48.81183	-122.48618	Detention pond outfall	North Waldron	Stream 0553	1.59
031	48.81882	-122.48609	Detention pond outfall	Kelly Road	Tributary to stream 0143	0.88
003	48.82224	-122.48609	Detention pond outfall	4+413	Stream 0143	1.08
002	48.82606	-122.48653	Detention pond outfall	Larson	Stream 0143	2.17
032	48.82647	-122.48593	New cross culvert under roadway	Larson	Stream 0143	Est. 2
013	48.83314	-122.48715	Detention pond outfall	Smith	Silver Creek	1.02
005	48.84414	-122.48604	Two detention pond outfalls—one south, one north of Deer Creek	Deer Creek	Deer Creek	5.83
006	48.86706	-122.48596	Detention pond outfall	Tenmile	Tenmile Creek	3.2
007	48.86806	-122.48589	Detention pond outfall	Fourmile	Fourmile Creek	3.2
008	48.86814	-122.47034	Downstream of Sterk wetland creation site	NA	Tenmile Creek	NA
011	48.86633	-122.47049	Downstream of Sterk wetland creation site	NA	Tributary to Tenmile Creek	NA

[1] Basin is the designation by WSDOT project designers in the SR 539 Horton Road to Tenmile Road Supplemental Hydraulic Report (December 12, 2003) for calculating stormwater treatment requirements in Threshold Discharge Areas in the project. 008 and 011 are locations in streams downstream of a wetland creation site, and the project does not provide hydraulic calculations for these locations.

[2] Q refers to a design flow calculated for the treatment facility tributary to the outfall. The design flow here is the maximum flow expected to occur once every two years and is provided for comparison. Actual flows will vary depending on rainfall intensity, duration, and ground saturation.

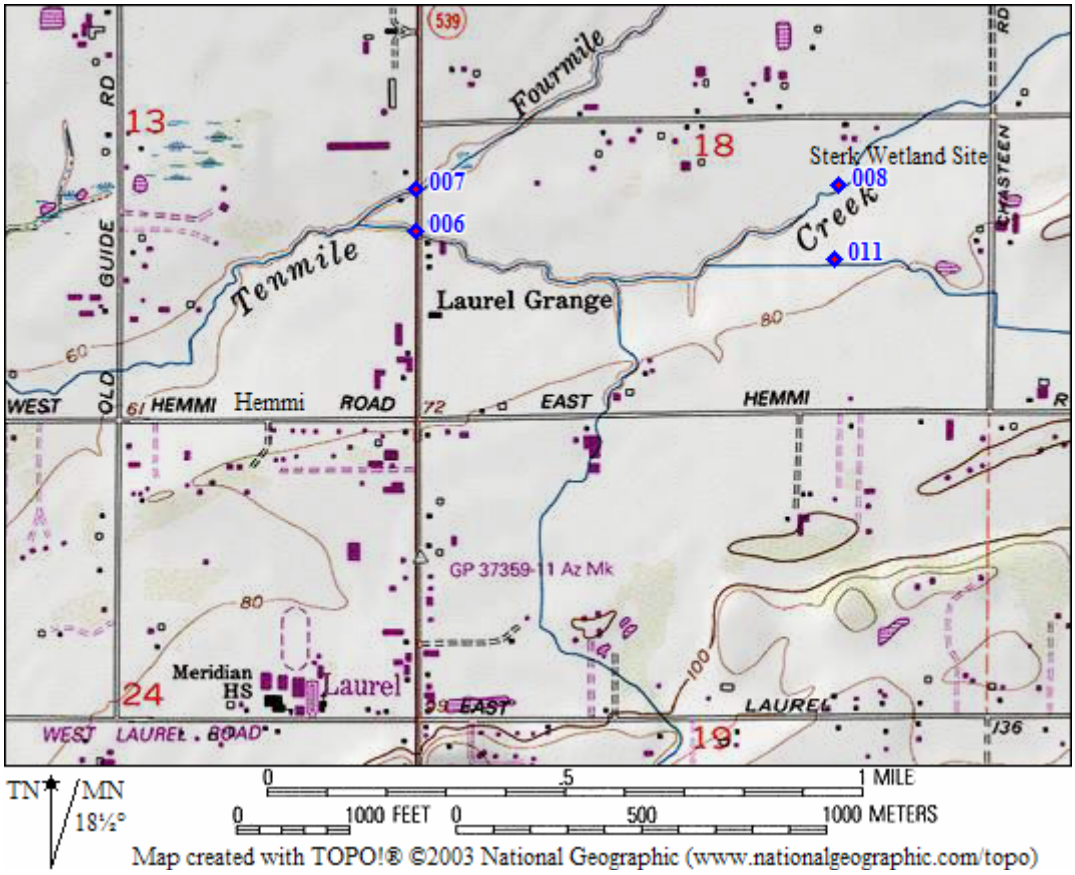


Figure 1: Locations of approximate outfall locations on the north end of the project.

DESCRIPTION OF DISCHARGE

Stormwater runoff from the project will discharge into the stream systems listed in Table 1 via roadside ditches and the WSDOT storm drain system. Pollutants of concern for this project are sediment, pH, and oil & grease. Final stormwater outfall locations listed in Table 3 are based on the permanent stormwater treatment system design. Ponds will be used for treatment during construction, but outfall locations may vary as new roadway, detention ponds, embankments, and other project features are constructed. Discharge locations will also depend on the timing of runoff-producing rainfall events in relation to construction progress. The Permittee will adjust monitoring in relation to construction progress and rainfall conditions. Pollutant source control, erosion control BMPs, and stormwater ponds are the main treatment methods for preventing polluted stormwater from the project. Small amounts of construction runoff may infiltrate into the ground, but soils in the area have low permeability. On-site wetlands (except those scheduled for permanent loss and replacement) and creeks receiving the discharges are considered to be waters of the State, and the Permittee is required to meet applicable surface water quality standards.

Due to the inherent variability in construction sites, management practices, and weather, it is not possible to characterize the storm water from construction activities in terms of the average rate or frequency of discharges, or the average or estimated range in pounds per day, of pollutants. Flow values listed in Table 2 are for relative comparison between outfalls. Pollutants expected in the discharge from construction activity include sediment (i.e., suspended solids, turbidity), pH, and petroleum products. These pollutants are described in the subsequent paragraphs.

A. Sediment. Construction activity involves land-disturbing operations, such as clearing, grading, and excavation. Disturbed soils that are exposed to precipitation are subject to erosion resulting in runoff contaminated with suspended sediment. Suspended sediment is the primary constituent in construction stormwater and is commonly measured as total suspended solids (TSS) and/or turbidity:

1. Total suspended solids (TSS) is a measure of the suspended material in water. The measure of TSS in storm water allows for an estimation of sediment transport, which can have significant effects in downstream receiving waters.

2. Turbidity, expressed as Nephelometric Turbidity Units (NTU), is a measure of the ability of light to penetrate the water. Turbidity is a function of the suspended solids in water. It has been demonstrated to exhibit control over biological functions, such as the ability of submerged aquatic vegetation to receive light and the ability of fish gills to absorb dissolved oxygen.

B. pH. Construction stormwater may become contaminated from alkaline construction materials resulting in high pH (greater than pH 7). Alkaline construction materials include concrete, mortar, lime, cement kiln dust (CKD), Portland cement treated base (CTB), fly ash, recycled concrete, and masonry work.

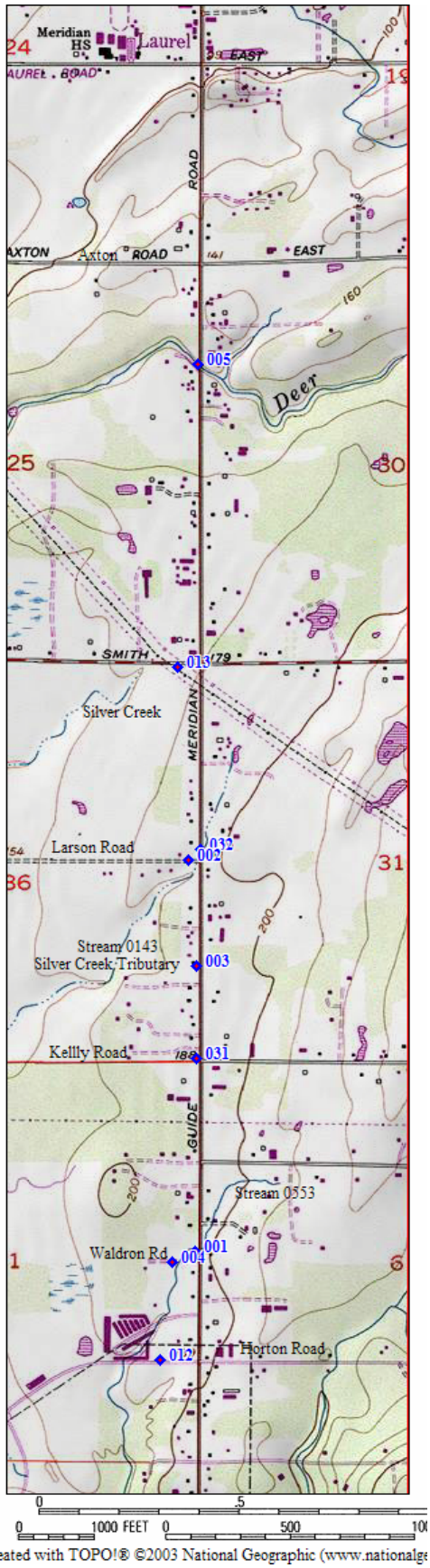


Figure 2: Outfalls on south end of project.

C. Petroleum Products. Oil, grease, and other petroleum products may contaminate storm water if they are spilled or leaked from heavy equipment, diesel pumps, fuel tanks, or vehicles.

D. Other pollutants. Phosphorus is a potential constituent of construction stormwater because it occurs naturally in soils and is a concern for discharge to fresh water lakes. No discharge occurs to a lake for this project, so the permit conditions to control sediment discharge are adequate to control phosphorous. Historical contamination or natural soil conditions may contribute other pollutants to storm water. Examples might include pesticides, metals (arsenic, lead, etc.), PCBs, and petroleum. No such pollutant sources were identified in the permit application. The Permittee is required to report any potential discharge of unexpected materials in the general conditions of the permit.

SEPA COMPLIANCE

New facilities must demonstrate compliance with the State Environmental Policy Act (SEPA, Chapter 43.21C RCW), before permit coverage can be authorized. A modification of permit coverage for physical alterations, modifications, or additions to the construction site also requires SEPA compliance. Additional SEPA review may be necessary if the modification is outside of the scope of the initial SEPA evaluation.

BASIS FOR PERMIT CONDITIONS

DISCHARGE LIMITATIONS

Ecology also has authority under Chapter 90.48 RCW to issue permits for discharges to state surface waters, ground waters and municipal sewer systems and require that dischargers apply all known, available and reasonable treatment (AKART) to control pollutants in the discharge. Discharges conditionally authorized by the permit include: 1) stormwater discharges from construction activities, 2) stormwater discharges from construction support activities, and 3) allowable non-stormwater discharges, including discharges from dewatering and dust suppression. This permit covers discharges of these water sources to surface and ground water.

Federal and state regulations require that effluent limitations set forth in an NPDES permit must be either technology- or water quality-based. Technology-based limitations are based upon the treatment methods available to treat specific pollutants. Technology-based limitations are set by regulation or developed on a case-by-case basis (40 CFR 125.3, and Chapter 173-220 WAC). Water quality-based limitations are based upon compliance with the surface water quality standards (Chapter 173-201A WAC), ground water standards (Chapter 173-200 WAC), sediment quality standards (Chapter 173-204 WAC) or the National Toxics Rule (Federal Register, Volume 57, No. 246, Tuesday, December 22, 1992). The more stringent of these two limits must be chosen for each of the parameters of concern. For stormwater discharge, the most stringent limit can depend on rainfall and stream flow conditions, so this permit uses both basis. Each of these types of limits is described in more detail below.

TECHNOLOGY-BASED EFFLUENT LIMITATIONS

This permit sets effluent limits for turbidity based on Ecology experience with the gravel pit industry and other stormwater permits. The permit also applies the same technology-based effluent limitation as the General Permit for construction area management, effluent monitoring for compliance with benchmarks, and adaptive management if benchmarks are exceeded. The narrative limit, Condition S6, is a set of planning requirements, BMP upgrades, and increasing runoff monitoring frequency. WAC 173-201A-160 says that applying appropriate BMPs to stormwater runoff is the primary method to assure compliance with water quality standards. Ecology expects that in all circumstances, appropriate response to exceeding the benchmarks in Condition S6 will ensure compliance with the effluent limits.

The sand and gravel industry is engaged in significant land disturbing activities, such as earth movement, excavation, mining, and washing and sorting of aggregate. In 1994, a new Sand and Gravel General Permit was developed by Ecology in which a discharge limit of 50 NTU for turbidity, via conventional sedimentation, was established. Over the last nine years this similar source category has demonstrated the 50 NTU limit to be achievable. In 1998, Ecology first issued an Individual Construction Stormwater Permit which was based on the general permit but also required discharge monitoring. A review of available data from eight individual construction stormwater permitted facilities showed that less than ten percent of the discharge data failed to meet 50 NTU. Therefore, a technology-based effluent limitation for turbidity of 50 NTU using for conventional erosion control and sedimentation techniques is set in this permit.

The *SWMMWW* (Section 3.2 of Volume V "Oil Control Menu") and *HRM* set a performance goal for oil control BMPs. The facility choices in the Oil Control Menu are intended to achieve the goals of no ongoing or recurring visible sheen, and to have a 24-hour average Total Petroleum Hydrocarbon (TPH) concentration no greater than 10 mg/l, and a maximum of 15 mg/l for a discrete sample (grab sample).

The discharge of process wastewater, domestic wastewater, or non-contact cooling water to a storm drain or surface waters is prohibited. Illicit discharges are not authorized, including spills of oil or hazardous substances, and obligations under state and federal laws and regulations pertaining to those discharges apply.

SURFACE WATER QUALITY-BASED EFFLUENT LIMITATIONS

The Washington State surface water quality standards (Chapter 173-201A WAC) is a state regulation written to protect the beneficial uses of the surface waters of the state. In order to protect existing water quality and preserve the designated beneficial uses of Washington's surface waters, WAC 173-201A-060 –"Implementation" states that application of BMPs specified in permits will be used by dischargers of stormwater to control pollutions and comply with state water quality standards. Activities that cause pollution of stormwater shall be conducted so as to comply with surface water quality standards. The requirement provides broad justification for SWPPP and application of BMPs in permit Condition S6.

Numerical Criteria for the Protection of Aquatic Life

"Numerical" water quality criteria are numerical values set forth in the water quality standards for surface waters (Chapter 173-201A WAC). They specify the levels of pollutants allowed in a receiving water while protecting aquatic life. Numerical criteria set forth in the water quality standards may be used along with chemical and physical data for the discharge and receiving water to determine if a discharge is complying with the standards.

The numeric criteria include requirements for pH and turbidity used to set some limits in the permit. The surface water quality standards (Chapter 173-201A-030) state that turbidity shall not exceed 5 NTU over background turbidity when the background turbidity is 50 NTU or less, or have more than a 10 percent increase in turbidity when the background turbidity is more than 50 NTU (Class A). For Class A fresh water, pH shall be within the range of 6.5 to 8.5 with a human-caused variation within a range of less than 0.5 units. The permit sets an effluent limit for discharge from threshold discharge areas with significant concrete work at 6.5 to 8.5.

Numerical Criteria for the Protection of Human Health

The U.S. EPA has promulgated 91 numeric water quality criteria for the protection of human health that are applicable to Washington State (EPA, 1992). These criteria are designed to protect humans from cancer and other diseases and are primarily applicable to fish and shellfish consumption and drinking water from surface waters. None of these pollutants are expected in this discharge.

Narrative Criteria

In addition to numerical criteria, “narrative” water quality criteria (WAC 173-201A-030) limit toxic, radioactive, or deleterious material concentrations below those which have the potential to adversely affect characteristic water uses, cause acute or chronic toxicity to biota, impair aesthetic values, or adversely affect human health. Narrative criteria protect the specific beneficial uses of all fresh (WAC 173-201A-130) and marine (WAC 173-201A-140) waters in the state of Washington. The effluent limits and management requirements in the permit are sufficient to satisfy the narrative criteria.

Consideration of 303d Listed Waters

Discharge permits must consider not increasing pollutant levels in water bodies that are included as impaired on the State’s 303d list. Numeric effluent limitations are needed for construction sites that discharge to water bodies that are impaired for suspended sediment (turbidity, fine sediment, total suspended solids, and sedimentation), high pH, phosphorus, and other applicable parameters identified by Ecology. Some the receiving water segments downstream are included on the 303d list for temperature, dissolved oxygen, low pH, and fecal coliform bacteria. None of these pollutants are associated with construction site runoff, so the permit does not impose water quality-based limits in consideration of impaired water bodies.

Antidegradation

The State of Washington's Antidegradation Policy requires that discharges into a receiving water shall not further degrade the existing water quality of the water body. In cases where the natural conditions of a receiving water are of lower quality than the criteria assigned, the natural conditions shall constitute the water quality criteria. Similarly, when the natural conditions of a receiving water are of higher quality than the criteria assigned, the natural conditions shall be protected. More information on the State Antidegradation Policy can be obtained by referring to WAC 173-201A-070. The effluent limits and management requirements in the permit are sufficient to satisfy the antidegradation requirements.

Mixing Zones

The water quality standards allow the Department of Ecology to authorize mixing zones around a point of discharge in establishing surface water quality-based effluent limits. No mixing zone is authorized in the permit.

Ground Water Quality Limitations

Ecology promulgated ground water quality standards (Chapter 173-200 WAC) to protect beneficial uses of ground water. The standards states that permits issued by the Department shall be conditioned in such a manner so as not to allow violations of those standards (WAC 173-200-100). The permit requires BMPs to limit contamination of storm water. Source control BMPs are expected to eliminate/minimize the potential contamination of storm water and to protect ground water.

High pH from the use of concrete or engineered soils is the most likely groundwater contaminant expected from construction sites. The permit sets a pH limit of 6.5 to 8.5 taken directly from the ground water standards for discharge to ground water when and where significant concrete work or the use of engineered soils occurs.

DIRECT MEASURE OF SURFACE WATER QUALITY

The permit includes monitoring of turbidity levels for Deer Creek, Tenmile Creek, and Fourmile Creek with a permit limit on changes induced in these water bodies to directly measure compliance with the standards in WAC 173-201A-030. Extensive construction activity for at least two winter seasons around, next to, and above these water bodies creates a reasonable potential for discharge of pollutants to these streams. The Permittee is required to measure the quality of these larger receiving waters to directly assess compliance with the water quality-based limitations for in-stream turbidity changes set in the standards.

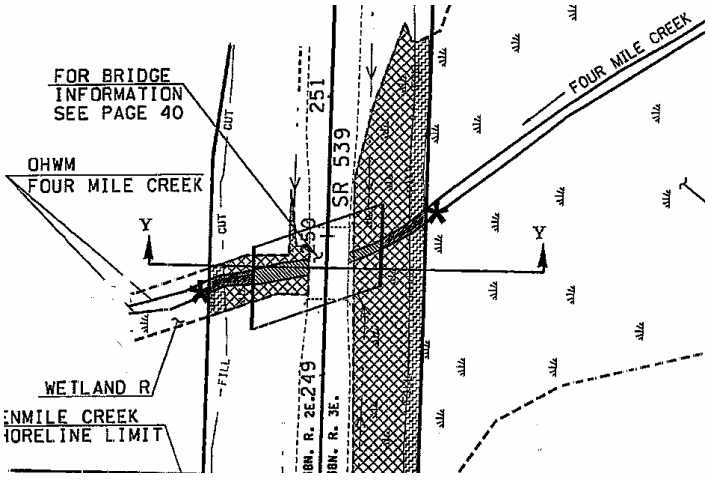


Figure 3: Fourmile Creek turbidity monitoring locations marked by asterisks.

In summary, the permit effluent and receiving water limitations used in the permit based on state water quality standards are:

Turbidity measured in major streams on site: Downstream shall not exceed 5 NTU over background (upstream) turbidity when the background turbidity is 50 NTU or less, or have more than a 10 percent increase in turbidity when the background turbidity is more than 50 NTU.

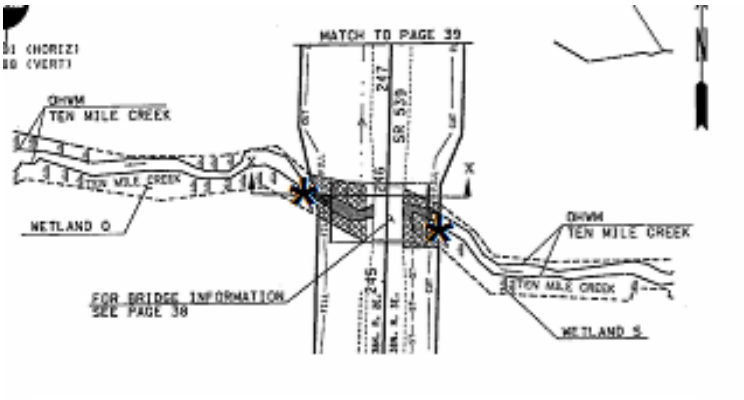


Figure 4: Tenmile turbidity monitoring locations marked by asterisks.

pH: shall be within the range of 6.5 to 8.5 for discharge and not cause a change of more than 0.5 units in the receiving water.

Petroleum products: Although there is no specific water quality standard for petroleum products, the hazardous waste rules under RCW 90.56 have been interpreted under RCW 90.48 to disallow visible sheen in any receiving waters.

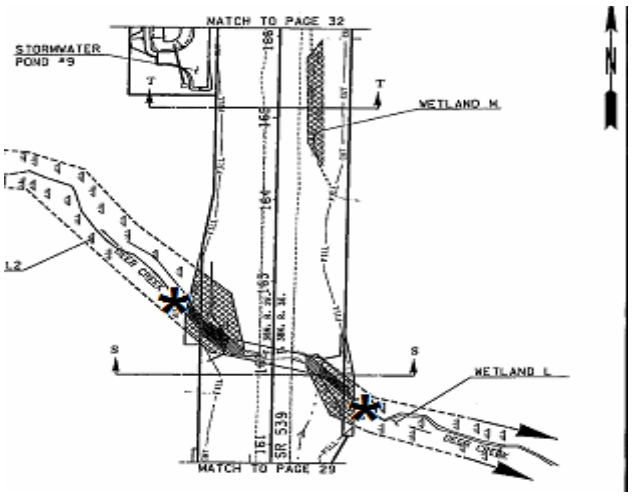


Figure 5: Deer Creek turbidity monitoring locations marked by asterisks.

COMPLIANCE WITH STANDARDS

This section requires that discharges associated with construction activity are subject to all applicable state water quality and sediment management standards. Discharges that are not in compliance with these standards are not authorized by the permit and are subject to enforcement action.

In recognition of the difficulty storm water presents to determine when a discharge is causing a water quality violation, the permit emphasizes BMPs and monitoring to prevent stormwater discharges from causing or contributing to violations of water quality standards. All Permittees are required to apply AKART, including the preparation and implementation of an adequate SWPPP and the installation and maintenance of BMPs in accordance with the SWPPP and the terms and conditions of this permit.

WAC 173-201-160 Implementation (*of the water quality standards)* says the primary method of assuring compliance with water quality standards for stormwater pollution is through application of appropriate BMPs in permits and other directives. Some smaller streams are not monitored because Ecology expects other permit conditions to ensure compliance with standards. This condition allows the Department to require the Permittee to take additional actions if discharges cause violation of water quality standards in receiving waters in the project area.

MONITORING REQUIREMENTS

The monitoring, recording, and reporting are consistent with the requirements of WAC 173-220-210 RCW and 40 CFR 122.41. Discharge monitoring requirements are consistent with the requirements of the General Permit and guidance in WSDOT *HRM*, Appendix 6B, for "high risk erosion projects." Monitoring is required when a discharge occurs in a TDA tributary to an outfall. Receiving water monitoring requirements are based on the judgment of the Department of Ecology; the frequencies are intended to concentrate monitoring effort during discharge events when potential for exceeding water quality standards is greatest.

Visual monitoring and the requirements for Certified Erosion and Sediment Control Lead are consistent with WSDOT standard operations and personnel training. These requirements are appropriate for a project of greater than 50 acres of land disturbance. Site inspections provide timely feedback to the operator on the effectiveness of installed BMPs.

Turbidity monitoring equipment and techniques are consistent with WSDOT's guidance in its *HRM*. This monitoring verifies compliance with effluent limits and to verify that BMPs are functioning correctly. The benchmark values are identical to the requirements of the General Permit. The benchmark value is a narrative effluent limit. Discharges from a construction site at or below the turbidity benchmark will not cause a water quality violation in the receiving water in most discharge situations. Discharges at or below the turbidity benchmark typically, but not always, indicate that erosion and sediment control BMPs are functioning effectively to protect water quality and the beneficial uses in the receiving water (e.g., stream, wetland, river, lake, etc.).

Site-specific conditions must still be considered to determine if a discharge of storm water from a construction site is causing a water quality violation. These conditions include the background turbidity of the receiving water, and the relative volume of the discharge compared to the receiving water. These measures are also required for the major streams that intersect the project.

If the benchmark is exceeded in a stormwater discharge, the permit requires the Permittee to take appropriate actions to identify and correct the problem(s) causing the turbidity benchmark exceedance. This approach is consistent with WAC 173-201A-160 to use BMPs to ensure that stormwater discharges not violate water quality standards in the receiving water.

High pH (alkalinity in the runoff) is a recognized pollutant of concern from construction activities because it is associated with concrete demolition and pouring. The pH benchmark matches the water quality standards and monitoring is appropriate to check that the standard will not be violated in the receiving waters.

Triggers for concrete monitoring are taken from the General Permit and are:

1. Greater than 1000 cubic yards poured concrete;
2. Greater than 1000 cubic yards recycled concrete; and
3. The use of soil amendments (engineered soils) such as Portland cement treated base, cement kiln dust, fly ash, etc.

All of these activities, if exposed to rainwater, have the potential to significantly alter the pH in runoff, and potentially in the receiving water. When one of the triggers listed above occurs, the operator must sample pH, at a frequency of at least weekly, but at a duration as determined in Condition S4.F, at the location where runoff from the affected area is collected (typically a sediment pond, or other impounded body of water on-site) prior to discharge from the site. The Permittee will be required to neutralize the pH if it is over 8.5 standard units, prior to discharging such waters. The first sample should be collected after the first rainfall interacts with the recently applied alkaline material, because that is when pH will be the highest and therefore has the greatest potential to adversely impact the receiving water.

REPORTING AND RECORD KEEPING REQUIREMENTS

The reporting and record keeping requirements of Condition S4 are based on the federal and state authorities which allow Ecology to specify any appropriate reporting and record keeping requirements to prevent and control waste discharges. Section 308(a)(3)(A)(v) of the Clean Water Act and 40CFR 122.41(h) provide federal authority. RCW 90.48.555(8)(a)(v) and WAC 173-220-210 provide state authority. Keeping records and reporting provide practical measures that allow the Permittee and Ecology to assess compliance with the requirements of this permit. Reporting and recordkeeping assists Ecology to meet the legislative intent for accountability in RCW 90.48.555.

The Permittee is required to notify Ecology within 24 hours of any significant discharges of sediment. Reporting of benchmark values of 250 NTU was established because they provide the operator with an indication that current erosion and sediment controls are not functioning for their intended purpose. This telephone reporting approach is intended to allow the Permittee to address these issues in a timely manner and allows Ecology to prioritize technical assistance and inspection resources. The telephone reporting requirement provide opportunity for Ecology to ascertain that the implementation approach in WAC 173-201A-160 is effective.

In accordance with 40 CFR 122.44(i)(3-4), Special Condition S4.C, S4.D and/or S4.E require the sampling results to be recorded and kept by the Permittee. The Permittee is required to submit monthly summaries of the sampling to Ecology on Discharge Monitoring Report (DMR) forms approved by Ecology. DMRs are required to be filed with Ecology even if there was no discharge during the monitoring period. The Permittee is required to submit detailed records if discharge limits or water quality standards are violated. These reports provide a certified record of when and where sampling has occurred, the results of the analysis, and documentation that required actions have taken place. All records must be retained for a three-year period after the permit has been terminated [40 CFR 122.41(j)(2)].

The Permittee is required to conduct inspections, BMP maintenance, SWPPP implementation, monitoring, and reporting. The Permittee is responsible to be aware of and understand the terms and conditions of this permit. If the Permittee is unable to comply with any of the terms and conditions of this permit for any reason, and if the noncompliance causes a threat to human health or the environment, Condition S4.F requires the Permittee to notify Ecology immediately upon discovery.

A summary report must be submitted to Ecology within five days after becoming aware of a permit violation. This report will detail the conditions that led to noncompliance, a description of the when, where, and the extent of any discharges that may have occurred, characterization of the discharge, and the actions taken to correct the noncompliance. If the noncompliance cannot be corrected prior to the five-day notification requirement, then the report shall explain why the noncompliance continues, what interim steps have been taken to mitigate or stop further violations, and when corrective actions will be completed.

The Permittee has submitted a SWPPP to Ecology as part of the permit application. The SWPPP will be updated as the project progresses. The permit provides public access to the SWPPP during the application process and during construction activity. This requirement is needed to provide public review opportunities of the updates to the original permit application material.

SOLID AND LIQUID WASTE DISPOSAL

This section is intended to ensure that handling and disposal of solid or liquid wastes do not result in a violation of applicable water quality regulations (40 CFR 122.44(k)(2), 40 CFR 125.3(g), RCW 90.48.080, and WAC 173-216-110(1)(f)).

Stormwater control activities, such as containment, collection, separation, and settling may result in the generation of solid and liquid wastes. Housekeeping and other site management activities may generate solid and liquid wastes such as drip traps, cleanup of process areas, and removal of spill materials. Proper disposal of liquid and waste materials is required. This permit requirement is intended to prevent the discharge of trash, chemicals, and other polluting materials into waters of the state.

STORMWATER POLLUTION PREVENTION PLAN REQUIREMENTS

The Permittee commented on the draft permit that they prepare a “Stormwater Site Plan” (SSP) and a “Temporary Erosion and Sediment Control Plan” (TESC) to address the SWPPP requirement.

The narrative technology-based effluent limitations of S6 are AKART as defined in Chapter 90.48RCW. AKART specifically includes the preparation and implementation of an adequate SWPPP, with all appropriate BMPs installed and maintained in accordance with the SWPPP and the terms and conditions of this permit. This technology-based requirement must be implemented regardless of potential impact of stormwater discharges on the receiving water body. SWPPP implementation and regular BMP evaluation are critical to ensuring BMP effectiveness at preventing soil erosion and generating discharges of pollutants off-site. Stormwater discharges are difficult to predict and highly variable in both volume and concentration. Therefore, proper stormwater management is primarily a preventative activity. When a storm occurs, it is often too late to put source control BMPs in place. Once storm water becomes polluted it is also more difficult and expensive to treat.

Permittees who choose to follow the stormwater management practices contained in approved stormwater technical manuals, including the proper selection, implementation, and maintenance of appropriate BMPs, including, but not limited to, sampling, monitoring, adaptive management mechanisms, reporting and record keeping (as defined in RCW 90.48.555) are presumed to have

satisfied this demonstration requirement and do not need to include within the SWPPP the technical basis which support the performance claims for the BMPs being used. This is considered the presumptive approach.

The SWPPP must also include a reference to the manual used. Approved stormwater technical manuals include:

1. Stormwater Management Manual for Western Washington, February 2005 (or more current version that exists at the time the Permittee applies for permit coverage) for sites west of the crest of the Cascade Mountains;
2. Department of Transportation's Highway Runoff Manual (most current version as maintained by WSDOT).

However, Permittees who elect not to follow the presumptive approach must document the technical basis for the design criteria used to design their stormwater management BMPs. Within the SWPPP, Permittees must document BMP selection criteria, anticipated pollutant removal from the BMP selected, and the technical basis (scientific, technical studies, and/or modeling) which supports the performance claims for the BMPs selected. The SWPPP must also provide an assessment of how the selected BMP will comply with state water quality standards, satisfy the AKART requirements, and the federal technology-based treatment requirements.

In accordance with 40 CFR 122.44(k) and 40 CFR 122.44 (s), and to implement WAC 173-201A-160, the permit includes requirements for the development and implementation of SWPPP along with BMPs to minimize or prevent the discharge of pollutants to waters of the state. BMPs constitute Best Conventional Pollutant Control Technology (BCT) and Best Available Technology Economically Achievable (BAT) for stormwater discharges. Ecology has determined that development of a SWPPP and implementation of adequate BMPs in accordance with this permit constitutes "all known, available and reasonable methods of prevention control and treatment" (AKART).

The elements of the SWPPP are part of Ecology's Stormwater Management Manual for Western Washington and WSDOT's HRM. Application of the HRM is WSDOT's internal policy. The objectives of the SWPPP are to:

1. Implement BMPs to prevent erosion and sedimentation, and to identify, reduce, eliminate or prevent stormwater contamination and water pollution from construction activity.
2. Prevent violations of surface water quality, ground water quality, or sediment management standards.
3. Prevent adverse water quality impacts, including impacts to beneficial uses of the receiving water by controlling peak flow rates and volumes of stormwater runoff at the Permittee's outfalls and downstream of the outfalls during the construction phase of a project.

Condition S6 outlines the specific requirements for the preparation, implementation, and modification of the SWPPP. The SWPPP, including narrative and drawings, must be prepared and fully implemented in accordance with this permit. The SWPPP must address all phases of the construction project, beginning with initial soil disturbance until final site stabilization. All BMPs utilized or planned for a project (or specific phase of a project) must be clearly referenced in the SWPPP narrative and marked on the drawings.

The SWPPP narrative must include documentation to explain and justify the pollution prevention decisions made for the project. Documentation shall include:

1. Information about existing site conditions (topography, drainage, soils, vegetation, etc.);
2. Potential erosion problem areas;
3. The 12 elements of a SWPPP in S6.D.1-12, including BMPs used to address each element;
4. Construction phasing/sequence and BMP implementation schedule;
5. The actions to be taken if BMP performance goals are not achieved;
6. Engineering calculations for ponds and any other designed structures; and
7. The Site Logbook required by Condition S3.B.

The 12 elements of the SWPPP are:

1. Mark Clearing Limits
2. Establish Construction Access
3. Control Flow Rates
4. Install Sediment Controls
5. Protect Vegetation/Stabilize Soils
6. Protect Slopes
7. Protect Drain Inlets
8. Stabilize Channels and Outlets
9. Control Pollutants
10. Control Dewatering
11. Maintain BMPs
12. Manage the Project

The SWPPP was included with the permit application. It should be kept up-to-date as project conditions dictate.

GENERAL CONDITIONS

General Conditions are based directly on state and federal law and regulations.

Condition G1 requires discharges and activities authorized by the draft permit to be consistent with the terms and conditions of the permit in accordance with 40 CFR 122.41.

Condition G2 requires responsible officials or their designated representatives to sign submittals to Ecology in accordance with 40 CFR 122.22, 40 CFR 122.22(d), WAC 173-220-210(3)(b), and WAC 173-220-040(5).

Condition G3 requires the Permittee to allow Ecology to access the facility and conduct inspections of the facility and records related to the permit in accordance with 40 CFR 122.41(i), RCW 90.48.090, and WAC 173-220-150(1)(e).

Condition G4 identifies conditions that may result in modifying or revoking the general permit in accordance with 40 CFR 122.62, 40 CFR 124.5, and WAC 173-220-150.

Condition G5 requires the Permittee to notify Ecology when facility changes may require modification or revocation of permit coverage in accordance with 40 CFR 122.62(a), 40 CFR 122.41(l), WAC 173-220-150(1)(b), and WAC 173-201A-060(5)(b).

Condition G6 prohibits the Permittee from using the permit as a basis for violating any laws, statutes or regulations in accordance with 40 CFR 122.5(c).

Condition G7 requires the Permittee to reapply for coverage 180 prior to the expiration date of this general permit in accordance with 40 CFR 122.21(d), 40 CFR 122.41(b), and WAC 183-220-180(2). (Note: The permit has a maximum duration of five years before renewal is required.)

Condition G8 identifies the requirements for transfer of permit coverage in accordance with 40 CFR 122.41(l)(3) and WAC 173-220-200.

Condition G9 prohibits the reintroduction of removed substances back into the effluent in accordance with 40 CFR 125.3(g), RCW 90.48.010, RCW 90.48.080, WAC 173-220-130, and WAC 173-201A-040.

Condition G10 requires Permittees to submit additional information or records to Ecology when necessary in accordance with 40 CFR 122.41(h).

Condition G11 incorporates all other requirements of 40 CFR 122.41 and 122.42 by reference.

Condition G12 notifies the Permittee that additional monitoring requirements may be established by Ecology in accordance with 40 CFR 122.41(h).

Condition G13 requires the payment of fees for the permit as authorized under 90.48.465.

Condition G14 describes the penalties for violating permit conditions in accordance with 40 CFR 122.41(a)(2).

Condition G15 specifies that the permit does not convey property rights in accordance with 40 CFR 122.41(g).

Condition G16 requires the Permittee to comply with all conditions of the permit in accordance with 40 CFR 122.41(a).

Condition G17 requires the Permittee to comply with more stringent toxic effluent standards or prohibitions established under Section 307(a) of the Clean Water Act in accordance with 40 CFR 122.41(a)(1), WAC 173-220-120(5), and WAC 173-201A-040.

Condition G18 describes the penalties associated with falsifying or tampering with monitoring devices or methods in accordance with 40 CFR 122.41(j)(5).

Condition G19 requires Permittees to report planned changes in accordance with 40 CFR 122.41(l)(1).

Condition G20 requires Permittees to report anticipated noncompliances in accordance with 40 CFR 122.41(l)(2).

Condition G21 requires Permittees to report any relevant information omitted from the permit application in accordance with 40 CFR 122.41(l)(8).

Condition G22 provides the regulatory context and definition of "Upset" in accordance with 40 CFR 122.41(n).

Condition G23 prohibits bypass unless certain conditions exist in accordance with 40 CFR 122.41(m).

PERMIT ISSUANCE PROCEDURES

PERMIT MODIFICATIONS

The Department may modify this permit to impose numerical limitations, if necessary, to meet water quality standards for surface waters, sediment quality standards, or water quality standards for ground waters, based on new information obtained from sources such as inspections, effluent monitoring, outfall studies, and effluent mixing studies.

The Department may also modify this permit as a result of new or amended state or federal regulations. The permit may be modified, in the future, if additional studies, investigations, or information warrant modification of the terms or conditions of the permit.

RECOMMENDATION FOR PERMIT ISSUANCE

This proposed permit meets all statutory requirements for authorizing a wastewater discharge, including those limitations and conditions believed necessary to control toxics, protect human health, aquatic life, and the beneficial uses of waters of the state of Washington.

Acronyms

BMP	Best Management Practice
CERCLA	Comprehensive Environmental Response Compensation & Liability Act
CFR	Code of Federal Regulations
CWA	Clean Water Act
EPA	Environmental Protection Agency
ESC	Erosion and Sediment Control
FWPCA	Federal Water Pollution Control Act
NOI	Notice of Intent
NOT	Notice of Termination
NPDES	National Pollutant Discharge Elimination System
RCRA	Resource Conservation and Recovery Act

RCW	Revised Code of Washington
SEPA	State Environmental Policy Act
SWMM	Stormwater Management Manual for the Puget Sound Basin
SWPPP	Stormwater Pollution Prevention Plan
USC	United States Code
USEPA	United States Environmental Protection Agency
WAC	Washington Administrative Code
WQ	Water Quality

REFERENCES FOR TEXT AND APPENDICES

Environmental Protection Agency (EPA)

1992. National Toxics Rule. Federal Register, V. 57, No. 246, Tuesday, December 22, 1992.

1991. Technical Support Document for Water Quality-based Toxics Control. EPA/505/2-90-001.

1985. Water Quality Assessment: A Screening Procedure for Toxic and Conventional Pollutants in Surface and Ground Water. EPA/600/6-85/002a.

1983. Water Quality Standards Handbook. USEPA Office of Water, Washington, D.C.

Washington State Department of Transportation

2005. Joint Aquatic Resource Application (JARPA) to the Department of Ecology (includes SWPPP, Hydraulic Report, Drainage Plan, Biological Assessment, Wetland Mitigation Plans, etc.)

2005. NPDES Permit Application to the Department of Ecology.

2004. Highway Runoff Manual. WSDOT publication M31-16

Washington State Department of Ecology.

1994. Permit Writer's Manual. Publication Number 92-109.

2004. Stormwater Management Manual for Western Washington.

2005. Construction Stormwater General Permit, Fact Sheet, and Ecology response to public comments.

APPENDIX A—PUBLIC INVOLVEMENT INFORMATION

The Department has determined to issue an Individual Construction Stormwater NPDES permit to Washington State Department of Transportation for the State Route 539 (SR 539) from Horton Road (milepost 1.64) to Tenmile Road (milepost 6.26) construction project. The permit contains conditions and effluent limitations which are described in the rest of this fact sheet.

Public Notice of Application (PNOA) was published on September 28 and October 5, 2005, in the *The Bellingham Herald* to inform the public that an application had been submitted and to invite comment on the issuance of this permit.

The Department published a Public Notice of Draft (PNOD) on February 16, 2006, in *The Bellingham Herald* to inform the public that a draft permit and fact sheet were available for review. Interested persons were invited to submit written comments regarding the draft permit. The draft permit, fact sheet, and related documents were available for inspection and copying between the hours of 8:00 a.m. and 5:00 p.m. weekdays, by appointment, at the regional office listed below. Written comments were mailed to:

Water Quality Permit Coordinator
Department of Ecology
Northwest Regional Office
3190 160th Avenue SE
Bellevue, WA 98008-5452
Tmil461@ecy.wa.gov

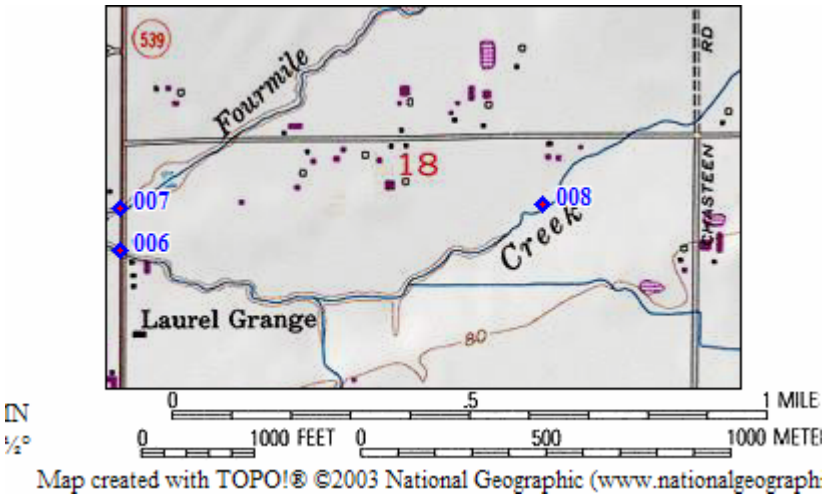
Any interested party was allowed to comment on the draft permit or request a public hearing on the draft permit within the 30-day comment period to the address above. The request for a hearing shall indicate the interest of the party and reasons why the hearing is warranted. The Department received requests for a public hearing but decided to not hold a public hearing since the reasons for a hearing were not applicable to the terms and conditions of the permit and fact sheet.

The Department considered all comments received within 30 days from the date of public notice of draft indicated above, in formulating a final determination to issue, revise, or deny the permit. The Department's response to all significant comments is included in Appendix C of this fact sheet and Ecology's responses were mailed directly to people expressing an interest in this permit.

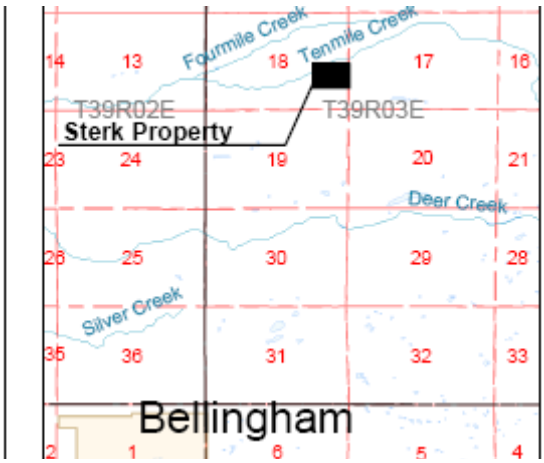
Further information may be obtained from the Department by telephone, (425) 649-7215, or by writing to the address listed above.

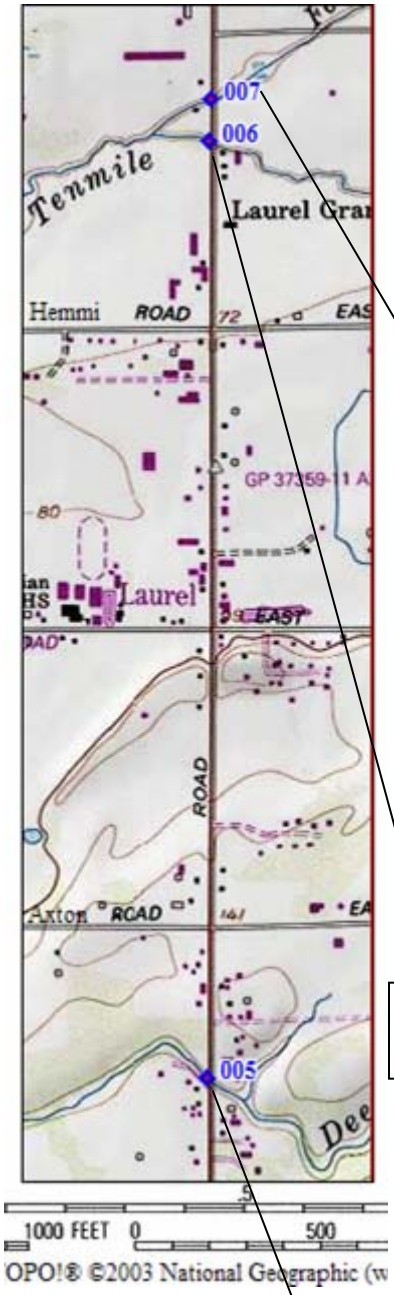
This permit and fact sheet was written by Gerald Shervey, P.E.

APPENDIX B—PHOTOS & MAPS OF RECEIVING WATERS



Vicinity map (below) and USGS map (above) with monitoring location waypoint 008 downstream of wetland mitigation site (Sterk Property) on Tenmile Creek.

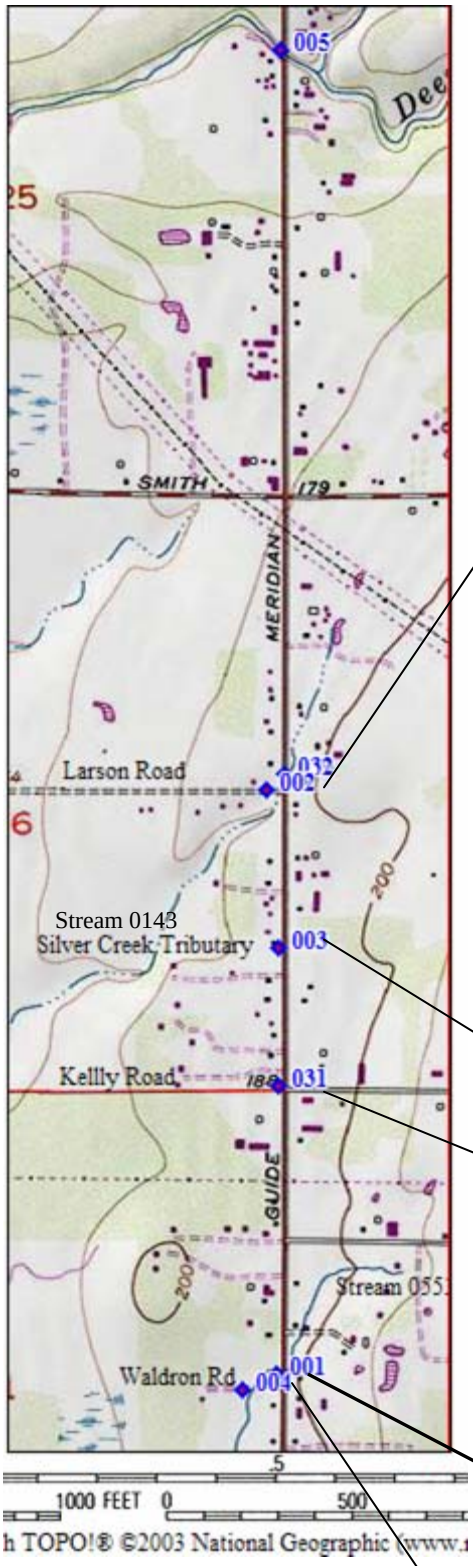




WP 007 at Sta 250: Fourmile Creek upstream of highway looking downstream (west). Channel is about 15' wide.

WP 006 at Sta 245: Tenmile Creek upstream of highway looking downstream (west). Channel is about 25' wide.

WP 005 at Sta 162: Deer Creek upstream of highway looking downstream (west). Channel is about 12 feet wide. Box culvert entrance shown.



WP 032 at Sta 97 & 002 on Larson Road. 8-foot-wide box culvert on stream 0143.

WP 003 at Sta 82: Tributary to stream 0143. Inlet (upstream end) of two 24" culverts

WP 031 at Sta 70: Drainage ditch tributary to stream 0143.

001 at 46+50: Stream 0553 upstream of road. Stream is 2 to 3 feet wide, ephemeral, fish bearing stream with grass bed.

APPENDIX C—RESPONSIVENESS SUMMARY

From: Azous, Amanda [mailto:AzousA@wsdot.wa.gov]
Sent: Thursday, March 16, 2006 7:09 AM
To: Shervey, Jerry
Subject: RE: SR 539 Horton to Tenmile NPDES permit comments

We are satisfied with your solutions. Thanks Jerry.

From: Shervey, Jerry [mailto:GSHE461@ecy.wa.gov]
Sent: Wed 3/15/2006 5:30 PM
To: Azous, Amanda
Subject: RE: SR 539 Horton to Tenmile NPDES permit comments

The 1998 KC manual would be fine. I have a copy of the 1995 HRM, which predates the 1998 KC manual. The 98 KC manual is probably more stringent than the 1995 HRM. This permit covers construction runoff and I used the term 'is consistent with...' and directed sampling based on the latest HRM, so I think the package is OK on the manual references. Construction water pollution control hasn't changed much over the last few manuals and the latest manual is available as a reference now. I would prefer to not make changes based on this comment. Verify you want to change the manual reference considering the permit is for construction stormwater runoff rather than the permanent facilities.

AKART is defined in the Definitions section. I added a note to the fact sheet about SSP and TESC and added these under the definition of SWPPP in the permit. I will include this whole email in the Responsiveness summary of the fact sheet unless you object.

> -----Original Message-----
> From: Azous, Amanda [mailto:AzousA@wsdot.wa.gov]
> Sent: Wednesday, March 15, 2006 4:28 PM
> To: Shervey, Jerry
> Cc: Zimmerman, Tyler D.; Damitio, Chris; Maas, John
> Subject: SR 539 Horton to Tenmile NPDES permit comments
>
> Hi Jerry,
>
> Here are WSDOT's comments some of which may have been taken care of by you already:
>
> Please add AKART in the list of acronyms if you haven't already in case someone from the public does try to read this.
> The Project actually used the King County Surface Water Design Manual (1998) for guidance on stormwater & construction stormwater design. The HRM was not around yet.
>
> We prepared a Stormwater Site Plan (SSP) and TESC plans. A SWPP, which is referred to throughout these documents, constitutes these two items together. You may want make sure that it is clear what documents are being referred to.